



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,933	06/30/2003	Josh Hogan	10002759.4	2541

7590 04/16/2007  
HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER
----------

CHU, KIM KWOK

ART UNIT	PAPER NUMBER
----------	--------------

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/16/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/610,933

Applicant(s)

HOGAN, JOSH

Examiner

Kim-Kwok CHU

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 2/2/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/30/2003 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Response to Remarks***

1. Applicant's Remarks filed on February 2, 2007 have been fully considered but it is not persuasive.

With respect to the rejected independent Claim 1, Applicant states that the prior art of Shoji (U.S. Patent No. 6,157,609) does not teach or suggest a method or system for "adjusting the write timing based on a comparison of a read error rate of a data set and a characterized read error rate as a function of write timing" (page 7 of the Remarks, last four lines). Accordingly, the prior art of Shoji teaches a method for changing the leading and trailing edge positions of a mark based on the data being recorded (Figs. 10 and 11; column 2, lines 40-42). In other words, the prior art of Shoji teaches the mark forming (writing) time is adjusted in order to change the leading and trailing edge positions (Fig. 21; column 31, lines 30-34). Furthermore, the prior art of Shoji uses a comparator 131 as illustrated in Fig. 1 to control the laser power level in order to achieve the variation of the leading and trailing edge's position. The comparator 131 compare a read error rate of a data set in form of a testing pattern (Fig. 1; column 31, lines 14-20).

Although the prior art of Shoji does not specify a characterized read error rate. however, there is a certain read error rate used in Shoji's comparator 131 as a function

(condition) of the writing timing (Fig. 1, variation of the leading and trailing edge of a mark is Applicant's writing timing).

The independent Claims 5-8 are rejected again based on the teaching of the same prior art of Shoji as explained above.

The newly added independent Claims 9-16 are rejected based on the teaching of the same prior art of Shoji as explained above.

#### ***Claim Objections***

2. Claim 13 is objected to because of the following informalities:

(a) in claim 13, line 11, the term "a lowest read error" should be changed to --a lower read error-- because there are only two read error rates.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless -  
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.*

4. Claims 1-16 are rejected under 35 U.S.C. § 102(e) as being anticipated by Shoji et al. (U.S. Patent 6,157,609).

5. Shoji teaches a method of adjusting write timing for an optical disc having all of the steps as recited in claims 1-4 and 10-12. For example, Shoji teaches the following:

(a) With respect to Claim 1, writing a data set (test patterns) with a write timing (pulse width, marks and spaces), at an area on an optical disc that has spatial features (tracks) that distort an analog read data signal (reproduced error is a kind of distort caused by tracking error), the distortion (reproduced error) varying as a function of write timing (data pattern), where the data set (each test pattern) has a characterized (corresponding) read error rate as a

function of write timing (pulse width, marks and spaces) at the area that has the spatial features (Figs. 1, 12 and 38, each test pattern has its corresponding error rate; column 22, lines 37-49); reading the data set from the optical disc (Fig. 1); determining a read error rate for the data set (column 31, lines 14-20); adjusting the write timing based on comparing the read error rate of the data set and the characterized read error rate as a function of write timing (Fig. 1; column 26, lines 34-39; column 31, lines 14-20).

(b) With respect to Claim 2, observing whether the read error rate increases when write timing is shifted in one direction (Fig. 1; position detector 120 detects error increase when the marks is longer than normal).

(c) With respect to Claim 3, observing whether the read error rate decreases when the write timing is shifted in one direction (Fig. 1; position detector 120 detects error decrease when the marks is closer to normal).

(d) With respect to Claim 4, repeating (interpolating) the steps of writing a data set (test patterns), reading the data set, and determining a read error rate for the data set, multiple times (Fig. 10; column 28, lines 36-45).

(e) with respect to Claim 10, means for observing whether the read error rate increases when write timing is shifted in one direction (Figs. 1, 21 and 22; the threshold of the

comparator 131 determines the trend of the error rate).

(f) with respect to Claim 11, means for observing whether the read error rate decreases when the write timing is shifted in One direction (Figs. 1, 21 and 22; the threshold of the comparator 131 determines the trend of the error rate).

(g) with respect to Claim 12, means for repeating the steps of writing a data set, reading the data set, and determining a read error rate for the data set, multiple times (Figs. 1, 21 and 22; column 26, lines 34-39; column 31, lines 14-20).

6. Claim 5 has limitations similar to those treated in the above rejection of claims 1 and 4, and is met by the reference as discussed above. Claim 5 however also recites the following limitations "selecting a lowest read error rate among the first and second read error rates" which is taught by the prior art of Shoji et al. (Fig. 1; data comparator compares test patterns and read data so that lowest read error rate can be obtained).

7. Claim 6 has limitations similar to those treated in the above rejection of claims 1 and 4, and is met by the reference as discussed above.

8. Claim 7 has limitations similar to those treated in the above rejection of claims 1 and 4, and is met by the reference as discussed above. Claim 7 however also recites the following limitations "choosing a write timing corresponding to the lowest read error rate" which is taught by the prior art of Shoji et al. (Fig. 1; data comparator 131 compares test patterns and read data and then adjusted the correct write timing/position).

9. Claim 8 has limitations similar to those treated in the above rejection of claims 1 and 4, and is met by the reference as discussed above.

10. Shoji teaches a system of adjusting a write timing for an optical disc having all of the means and elements as recited in claim 9. For example, Shoji teaches the following:

(a) with respect to Claim 9, means 103 for writing a data set (Fig. 1, a laser is used to write a data set) with a write timing (Fig. 3; marks are formed by a write pulses with timing such as space, leading and trailing edges), at an area (track) on an optical disc 101 that has spatial features (lands and grooves) that distort an analog read data signal (Fig. 1; noises and asymmetry of the writing pulses creates distortion of a read data), the distortion varying as a function of write



timing (Figs. 10 and 11; column 2, lines 40-42), where the data set has a characterized read error rate as a function of write timing at the area that has the spatial features (Fig. 1; column 31, lines 14-20): means 108 for reading the data set from the optical disc 101 (Fig. 1); means 131 for determining a read error rate for the data set (Fig. 1; column 31, lines 14-20); and means 119 for adjusting the write timing (leading and trailing edges) based on comparing the read error rate of the data set and the characterized read error rate as a function of write timing (Fig. 1).

11. Claim 13 has limitations similar to those treated in the above rejection of claim 9 and is met by the reference as discussed above. Claim 13 however also recites the following limitations "means for determining a second read error rate among the first and second read error rate" and "means for choosing a write timing corresponding to the lowest (optimum) read error rate" which is taught by the prior art of Shoji et al. (Fig. 1 and 21; data patterns are repeatedly read and error rates are obtained).

12. Claim 14 has limitations similar to those treated in the above rejection of claim 9 and is met by the reference as discussed above. Claim 14 however also recites the following limitations "means for repeating the preceding steps until the read error rate is less than a predetermined value" which is taught by the prior art of Shoji et al. (Fig. 1 and 21; data patterns are repeatedly read and an error rates are obtained for an optimum mark position).

13. Claim 15 has limitations similar to those treated in the above rejection of claim 9 and is met by the reference as discussed above. Claim 15 however also recites the following limitations "means for comparing the first and second error rates" and "means for adjusting the write timing based on the comparison of the first and second error rates" which is taught by the prior art of Shoji et al. (Fig. 1 and 21; data patterns are repeatedly read and error rates are obtained for comparison to a threshold value so that an optimum mark position is obtained).

14. Claim 16 has limitations similar to those treated in the above rejection of claim 9 and is met by the reference as discussed above.

**Conclusion**

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Takiguchi (5,982,718) is pertinent because Takiguchi teaches a write condition means for recording a mark in an optical disc.

**16. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).**

**A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action**

17. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington, can be reached on (571) 272-4483.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

Kim-Kwok CHU

*KE 4/9/07*  
Examiner AU2627

April 9, 2007

(571) 272-7585

*Andrea Wellington*  
ANDREA WELLINGTON  
SUPERVISORY PATENT EXAMINER